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THE USNEAS OF THE WORLD, 1752-1914

With Citations, Type Localities, Original Descriptions, and Keys
Part II.—South America

R. HEBER HOWE, JR.

To gather together the material for the present part has been no small task, and if through inadvertance any species have been overlooked the author earnestly hopes his attention will be called to the omissions. The former Part I of the present paper was published in the Proceedings of the Thoreau Museum of Natural History I: 15–25. 1913. So many requests have been received for it that it has been thought well to publish the future parts in a more widely known and accessible medium. Part I, North America, can be secured by addressing the author.

LIST OF USNEAS DESCRIBED FROM SOUTH AMERICA

1. *Usnea Hieronymi* var. *adusta* Kremphl.
2. " *barbata* var. *amblyoclada* Müll. Arg.
3. " *melaxantha* var. *angulosa* Müll. Arg.
4. " (*Neuropogon*) *antennarius* Nees & Flot.
5. " *arthrocladon* Fée.
6. " (*Parmelia*) *coralloides*, *aspera* Eschw.
7. " *arthroclada* var. *aspera* Müll. Arg.
8. " *bogotensis* Wain.
9. " *Bornmuelleri* var. *brasiliensis* Zahlbr.
" *Ceruchis* Montg.
10. " (*Lichen*) *Cinchonae* Willd.
11. " *cladocarpa* Fée.
12. " *concinna* Strtn.
13. " *concreta* Montg.
14. " *coralloides* Wallr.
15. " *florida* f. *dasycera* Nyl. apud Crombie.
16. " *densirostra* Tayl.
17. " *barbata* var. *mollis* f. *denudata* Wain.
18. " *fasciata* Torr.
19. " *barbata* var. *fastuosa* Müll. Arg.
20. " *trichodea* f. *firma* Kremphl.
21. " *barbata* var. *strigosa* stat. *ferruginascens* Müll. Arg.
22. " *flexuosa* Tayl.
23. " *strigosella* var. *furfurosula* Zahlbr.
24. " *barbata* var. *dasypoga* stat. *fusco-rufa* Müll. Arg.
25. " *laevis* var. *glacialis* Zahlbr.
26. " *barbata* f. *glaucescens* Kremphl.
27. " *cornuta* var. *gracilescens* Jatta.

28. *Usnea gracilis* Pers.
29. “ *sulphurea* var. *granulifera* Wain.
30. “ *Hieronymi* Kremphl.
31. “ *Baileyi* f. *implexa* Zahlbr.
32. “ *laevis* var. *implexa* Müll. Arg.
33. “ *Bornmuelleri* var. *brasiliensis* f. *inactiva* Zahlbr.
34. “ *cinchonarum* var. *inactiva* Zahlbr
35. “ *laevigata* Pers.
36. “ *laevigata* Wain.
37. “ *florida* var. *leioclada* Zahlbr.
38. “ *maculosa* Strt.
39. “ *melaxantha* Ach.
40. “ *meridionalis* Zahlbr.
41. “ *miliaria* Tayl.
42. “ *sulphurea* var. *normalis* Wain.
43. “ *barbata* var. *oxygona* Müll. Arg.
44. “ *angulata* var. *paradoxa* Zahlbr.
45. “ *poliothrix* Kremphl.
46. “ *punctulata* Strt.
47. “ *radiata* Strt.
48. “ *ceratina* var. *reagens* Zahlbr.
49. “ *barbata* var. *florida* stat. *rubescens* Müll. Arg.
50. “ *plicata* var. *scabra* Müll. Arg.
51. “ *dasypoga* var. *plicata* f. *sorediata* Zahlbr.
52. “ *plicata* var. *sorediosa* Müll. Arg.
53. “ *arthroclada* var. *spinulosa* Müll. Arg.
54. “ *Steineri* Zahlbr.
55. “ *melaxantha* f. *strigulosa* Zahlbr.
56. “ *melaxantha* var. *subciliata* Zahlbr.
57. “ *barbata* var. *subcorunta* Müll. Arg.
58. “ *barbata* var. *subelegans* Wain.
59. “ *barbata* var. *subelegans* f. *subinermis* Wain.
60. “ *trachycarpa* var. *sublaevis* Müll. Arg.
61. “ *barbata* var. *comosa* stat. *subrubiginea* Müll. Arg.
62. “ *Steineri* var. *tincta* Zahlbr.
63. “ *trachycarpa* var. *trachycarpoides* Wain.
64. “ *barbata* var. *trachyclada* Müll. Arg.
“ *tumidula* Tayl.

Key to the Usneas of South America

—Neuropogon—

- Branches terete
  - Apothecial disc ciliate
    - Disc black
      - Smooth..........................39. *melaxantha*
      - Verrucose
        - Esorediate......................42. var. *normalis*
          - Soralio-tuberculate............29. var. *granulifera*
          - Strigose......................55. f. *strigulosa*
  - Apothecial disc eciliate
    - Disc black
      - KHO+.......................... 4. *antennarius*
      - KHO—..........................18. *fasciata*
        - Subciliate......................60. var. *sublaevis*
    - Disc concolorous...................56. var. *subciliata*
- Branches angulate...................... 3. var. *angulosa*

Uncertain species: 63. *U. trachycarpa* var. *trachycarpoides*

—Excavatae—

- Chondroid axis lacunose, fistulous or arachnoid........32. var. *implexa*

—Leptinae—

- Chondroid axis 1-5 diameter of thalloid filament (internodal measurement)
  - Erect or subpendulous
    - Fibrils spinulous, stipate
      - Cortex thin, 50–70μ
        - KHO—........................17. f. *denudata*
        - KHO+........................58. var. *subelegans*
      - Cortex thick, 170–240μ
        - KHO—........................34. var. *inactiva*
        - KHO+........................10. *cinchonae* (=*cinchonarum*)
    - Fibrils espinulose, adventive
      - Branches angulate, papillate.......64. var. *trachyclada*
      - Branches terete
        - Cortex simple
          - Articulate, KHO+............62. var. *tincta*
          - Nonarticulate, KHO—........54. *Steineri*
        - Cortex double
          - Fibrils infrequent
            - Branches inflated, articulate
              - KHO+.................. 9. var. *brasiliensis*
              - KHO—..................33. f. *inactiva*
          - Fibrils frequent, branches non-articulate...40. *meridionalis*

Uncertain species: 27. *U. cornuta* var. *gracilescens*

—Mesinae—

- Chondroid axis 1-3 diameter of the thalline filament
  - Apothecial margin densely ciliate; cilia pinnate
    - Thallus prostrate, articulate, fibrils stipate..........11. *cladocarpa*
  - Apothecial margin sparsely ciliate; cilia simple
    - Cortex smooth
      - Espinulose; cilia articulate......... 5. *arthrocladon*
      - Spinulose; cilia articulate..........53. var. *spinulosa*
    - Cortex asperate
      - Thallus erect
        - Articulate, smooth..............45. *poliothrix*
        - Nonarticulate, cartilaginous
          - Branches evolute
            - Cinereus
              - Smooth.................37. var. *leicoclada*
              - Verrucose or papillate
                - Esorediate
                  - Strigose; fibrils stipate....21. st. *ferruginascens*
                  - Estrigose
                    - Dicroic ....49. st. *rubescens*
                    - Non-dicroic........14. *coralloides* (=*florida*)
                - Sorediate..............61. st. *subrubiginea*
          - Branches adventive (saxicolous)
            - Cortex smooth
              - Branches intricate
                - KHO—...............32. var. *implexa*
                - KHO+................25. var. *glacialis*
              - Branches not intricate... . .35. *laevigata*
            - Cortex verrucose........... 6. *aspera* (=41. *miliaria*)
      - Thallus pendulous
        - Primary branches 1–2 mm. diameter
          - Thallus subarticulate, mostly smooth
            - Spinulose..............24. st. *fusco-rufa*
            - Espinulose
              - Asperate............50. var. *scabra*
              - Sorediate............51. f. *sorediata* (=52. var. *sorediosa*)
          - Thallus nonarticulate, papillate
            - KHO+.............48. var. *reagens*
        - Primary branches 0.3–0.6 mm. in diameter
          - Smooth.................20. f. *firma*
          - Cavernose...............46. *punctulata*
        - Uncertain species: 35. *U. laevigata* Pers.; 8. *bogotensis;* 15. *florida f. dasycera;* 22. *flexuosa;* 26. *barbata f. glaucescens;* 43 *barbata* var. *oxygona.*

—Pachynae—

- Chondroid axis ½ diameter of the thalline filament
  - Branches terete
    - Thallus intricate
      - Erect
        - Flavous
          - Fibrillose....................19. var. *fastuosa*
          - Efibrillose...................57. var. *subcorunta*
        - Cinereus
          - KHO+......................16. *densirostra*
          - KHO—
            - Fibrils concolorous..........30. *Hieronymi*
            - Fibrils black-tipped......... 1. *adusta*
      - Prostrate
        - Exciple smooth.................12. *concinna*
        - Exciple papillate...............47. *radiata*
      - Pendulous.......................28. *gracilis*
  - Branches angulate....................44. var. *paradoxa*
- Uncertain species: 2. *U. barbata* var. *amblyoclada;* 13. *concreta;* 23. *strigosella* var. *furfurosula.*

1. *Usnea Hieronymi* var. *adusta* Kremphl.

"Argentina." (Flora **61**: 436. 1878.)

"Fibrilli versus apices plus minus nigricantes, quasi adusti, caetera ut in typo." l. c.

2. *Usnea barbata* var. *amblyoclada* Müll. Arg. (Flora **72**: 509. 1889.)

"Serra Ventana." Argentina.

"thallus et ramificatio et color virescenti-flavicans ut in var. praecedente, sed tota humilior, ramilli minus copiose v. evanescentes et rami ramulique sorediosos-pulverulenti, quasi pulveraceo-incrassati et obtusi facti, saepius variet incurvi." l. c.

Type in the Boissier Herbarium, Chambésy.

3. *Usnea melaxantha* Ach. var. *angulosa* Müll. Arg.

"Patagonia." (Flora **71**: 528. 1888.)

"thallo robusta, parce ramosa, apothecia ciliata dorso et rami et podetia tota longitudine v. saltem longo tractu valide alveolatim plicato-angulosa.—Discus fuscus, v. cinerascenti-fuscus, at tum decoloratus tantum, in epithecio enim pigmentum nigrum hinc inde copiose occurrit et ramilli caeterum adsunt immixti bene cum var. *sphacelata* Montg. hujus speciei congruentes." l. c.

Type in the Boissier Herbarium, Chambésy.

= *U. dasypogoides* var. *angulosa* Müll. Arg.

4. *Neuropogon* [*Usnea*] *antennarius* Nees & Flot.

"Andes Antucenses, Chile." 1829. (Linnaea **9**: 497–498. 1834.)

"thallo stricto erecto polito teretiusculo ramoso-fastigiato ochroleuco, ramis setaceis nigricantibus pallide-annulatis, apotheciis podicellatis concavis, disco castaneo-nigro nitido, margine 1. subtus ciliato-doryphorove." l. c.

= *Usnea antennarius* (Nees & Flot.) Mass.

5. *Usnea arthrocladon* Feé.

"Brasilia." (Suppl . Essai sur les crypt. 148. *Pl.* 3. *f.* 4. 1836.)

"Thallo cylindraceo, prostrato, laevi, subvernicoso helvolo, articulato, articulis discretis, ramis divaricatis, bifurationibus subarcuatis, nudis, junioribus fibrillosis, apice acutis.

"Apotheciis (orbillis) concoloribus, amplis, orbicularibus, radiatis; radiis longissimis, articulatis, laxis." l. c.

= *U. intercalaris* Wain. (non Kremphl.) (Beitr. Kennt. Lich.—Fl. Suds.—Inseln, Jour. Mus. Godeffroy **4**: 96. 1873.)

= *U. laevigata* Pers. (Gaudich. Voy. Uran. 209. 1826.)

= *U. articulata* var. *dimorpha* Müll. Arg. (Flora **74**: 372. 1891.)

6. *Parmelia Coralloides, aspera* Eschw.

"Minas Adamantium Brasiliae"—"Brasilia meridionali." (Martius Flora Brazil. **1**: *pt.* 1, 227. 1833.)

"Thallo caespitoso erectiusculo aspero-tuberculoso ramuloso passim fibrilloso, ochroleuco et cinerascente, scutellis subterminalibus appendiculatis, disco carneo albescente, margine radiatim ciliato." l. c.

= *U. barbata* var. *aspera* (non Eschw.?) Müll. Arg. (Jahrb. Kgl. bot. Gart. und Museum **2**: 309. 1883. Flora **71**: 20. 1888.)

= *U. aspera* (Eschw.) Wain. (Etude Class. Nat. Morph. Lich. Bresil 7. 1890.)

= *U. laevis* var. *aspera* (Eschw.) Müll. Arg. (Hedw. **30**: 225. 1891.)

= *U. jamaicensis* Kremphl. non Ach. (Lich. Univ. 619. 1810.) fide Wain.

7. *Usnea arthroclada* var. *aspera* Müll. Arg.

"Theresopolis" "Serra do Picu," Brazil. (Hedw. **30**: 225. 1891.)

"rami vulgo esorediosi et minus longe et minus acute acuminati, verruculoso-aspera et subnodulosi, spinulis et glaucedine destituti." l. c.

Type in the Boissier Herbarium, Chambésy.

8. *Usnea bogotensis* Wain.

"prope Bogota." "Ad saxa 8000 s. m." (Hedw. **38**: 121. 1899.

"Forsan est subspecies U. jamaicensis Ach., thallo apicem versus bene sorediosо ab ea differens. Thallus erectus, long circ. 90 mm. basin versus rigidus, ramis primariis circ. 1, 5–1 mm crassis, crebre minuteque verruculosus, glaucescenti-stramineus, ramis omnibus teretibus, ramis adventitiis raro evolutis. Stratum myelhyphicum crebrum, jodo non reagens, KHO lutescens, dein subrubescens." l. c.

No. 40: J. Weir, in the Kew Herbarium, London.

[*To be Continued*]

SHORTER NOTES

I was much interested in reading of the two recent finds of *Leptobryum pyriforme* (L.) Wilson with gemmae. I collected this plant about eight years ago in an open field in Amesbury, Mass. As I sent some of the material to Dr. Best for investigation, he probably can vouch for my find. The moss was growing on a heap of muck carted from a bog to a wet field. The plants were growing separately, not in clumps, and were very delicate and pretty.

J. W. Huntington.

Amesbury, Mass.